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problem and its possible solutions, models can be of critical value to the key actors involved in making marketing, business, and corporate strategy decisions.

The actors include the six Cs of marketing: (1) company; (2) customers and potential customers; (3) competitors; (4) cooperative arrangements such as mergers, acquisitions, and licensing; (5) channel members and other key intermediate marketing organizations; and (6) culture and other environmental factors and stakeholders. Figure 49-1 presents the six Cs and their interrelationships.

*Marketing decisions* involve the traditional four Ps—product, price, promotion, and place—and seven additional Ps which are equally critical decision areas. These seven Ps are (1) positioning; (2) portfolio of market segments; (3) the basic portfolio of products by market segments and by distribution outlets; (4) the global portfolio of products by segments, country, and mode of entry; (5) politically based marketing tools such as negotiations; (6) public relations and public affairs; and (7) the entire program—a synergistic marketing mix. Table 49-1 presents the eleven Ps and their interrelationships.

**Levels of Decision Making.** The eleven Ps, which are the focus of marketing and other business strategy decisions, are carried out at all organizational levels—brand, product line, strategic business unit (SBU) sector or other aggregation of SBUs, and corporate. At all of these organizational levels the decision-making unit (DMU) should consider global and domestic strategies. Figure 49-2 presents the five key marketing DMUs.

Table 49-2 highlights the major characteristics of models for marketing decisions.

The balance of this chapter will discuss the decision-making units, the characteristics of marketing models, models of the six Cs, models of the eleven Ps, and some encouraging developments in models for marketing planning.

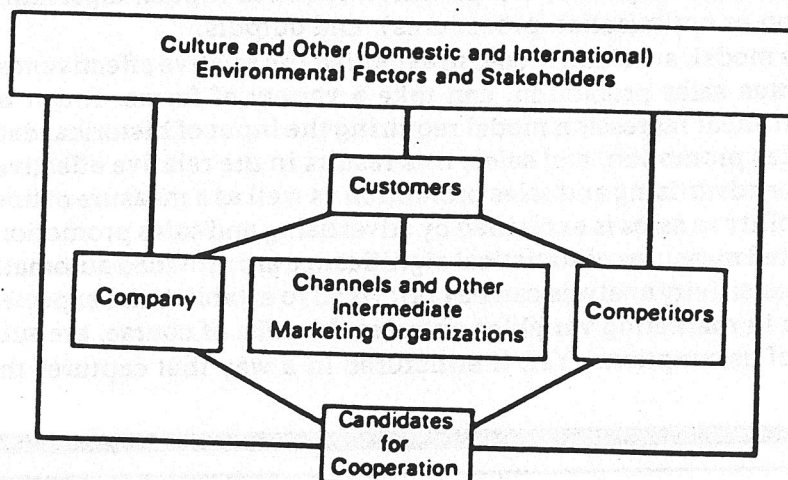
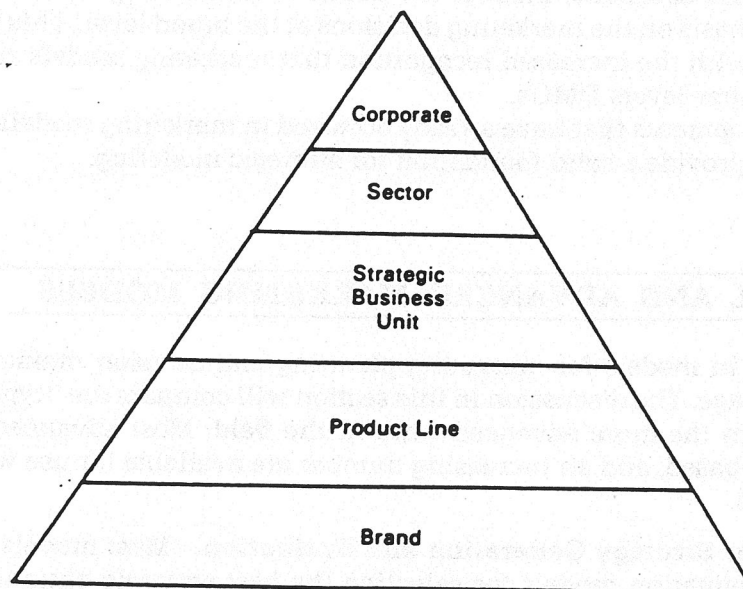


FIGURE 49-1 The six Cs of marketing.

**TABLE 49-1 The Eleven Ps of Marketing**

<ul style="list-style-type: none"><li>• Product</li><li>• Price</li><li>• Promotion</li><li>• Place</li></ul>	} The traditional 4 Ps
<ul style="list-style-type: none"><li>• Positioning</li><li>• Portfolio of market segments</li></ul>	} + The key segmentation positioning decision as the foundations of any marketing program
<ul style="list-style-type: none"><li>• Portfolio of products by segments, by distribution</li><li>• Portfolio of products by segments, by country, by mode of entry</li></ul>	} + A portfolio perspective recognizing the interdependency among the various portfolio units, and the global scope of marketing
<ul style="list-style-type: none"><li>• Politically based marketing tools (negotiations, etc.)</li><li>• Public relations and public affairs</li></ul>	} + New (politically based) marketing tools required to reach effectively the four additional Cs
<ul style="list-style-type: none"><li>• The program — a synergistic marketing mix</li></ul>	} + The integration of the eleven Ps in a cohesive directed and synergistic program



**FIGURE 49-2** Typical organizational levels of marketing planning and decision making.

**TABLE 49-2 Characteristics of Marketing Models**


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Objectives:	<ul style="list-style-type: none"> <li>• Models for strategy generation and evaluation</li> <li>• Descriptive, normative, and predictive models</li> </ul>
Inputs:	<ul style="list-style-type: none"> <li>• Data-based models and models of management subjective judgments</li> </ul>
The model:	<ul style="list-style-type: none"> <li>• Static and dynamic</li> <li>• Deterministic and stochastic</li> </ul>
The output:	<ul style="list-style-type: none"> <li>• Models and decision support system</li> </ul>

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## THE DECISION-MAKING UNIT

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Models for marketing planning and decision making are employed at all organizational levels. At the minimum one can consider five organizational decision-making units—the brand, product line, strategic business unit (SBU), sector, and corporate management. Other DMUs are found in some companies which organize by market segments, matrix, functions, or geography.

Common to all DMUs is concern for *marketing decisions* and *business decisions*. The latter focus on the overall business strategy of the unit as well as on those nonmarketing functions such as finance and manufacturing. In both decision areas, DMU management can benefit from models for the generation of strategies and models for the evaluation of strategic options.

Despite the relevance of marketing models to all DMUs for both marketing and business decisions, most of the published marketing models have a lopsided emphasis on the marketing decisions at the brand level. This is changing, however, with the increased recognition that marketing models are also valuable to higher-levels DMUs.

Developments that have already occurred in marketing modeling and measurement provide a solid foundation for strategic modeling.

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## TYPICAL AND ADVANCED MARKETING MODELS

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Advances in models for marketing planning and decision making far exceed current usage. The discussion in this section will compare the “typical” models in use with the more advanced work in the field. Most advanced models are computer-based, and an increasing number are available for use with personal computers.

**Models for Strategy Generation and Evaluation.** Most models currently in use are evaluation models for selecting the best strategic option. However, a growing number now focus on strategy generation as well. Models offering both include, for example, customized portfolio models for the identification of new product and market opportunities and new product optimization models which identify the best new product offerings.



**Descriptive, Predictive, and Normative Models.** Models are often classified based on their primary objective. Most consumer-based marketing models have tended to be *descriptive* in nature. The interest in *predictive* models is evident from the large number of forecasting models available and in use. And there has been an increasing interest in *normative* models as well as models which encompass all three objectives.

**Data-Based Models and Models of Management Subjective Judgments.** Most of the advances have been with models based on market data, and especially those using psychometric methods—multidimensional scaling, conjoint analysis, and other choice models—for the measurement of consumer perceptions and preferences. Models based on conjoint analysis have been used in over a thousand commercial applications as input to decisions concerning selection of benefit segment, positioning, development of new products, pricing, advertising, distribution, or finding the best marketing mix. Most of these studies have been at the brand or product line level.

When marketing decisions are made at the SBU and corporate level, there is no substitute for models incorporating management subjective judgment. This is especially the case when consumer-based inputs must be integrated with factors such as management's preferences, or when consumer studies are not available.

The application of choice rules to management decision making goes back to early Bayesian analysis, but interest in Bayesian techniques has declined. Interest is now centered on models of the decision calculus type and recent applications of the analytic hierarchy process (AHP). *Decision calculus* models, first proposed by J. D. C. Little and his colleagues, now include a large battery of models covering most marketing mix areas. The BRANDAID model relates brand sales and profit to the entire marketing program, competitive activities, and environmental conditions. The AHP uses management's subjective judgments for the generation of alternative courses of action and their evaluation. The AHP can integrate inputs from other market-based studies. It has been used in applications which include selection of target market segments, new product projects, marketing mix strategies, and portfolios of products by market segments and distribution systems. This approach relies heavily on sensitivity analysis to measure changes in input variables and assumptions.

**Static and Dynamic Models.** Most models in use tend to be static in nature. Recognizing, however, the dynamic nature of business, there is growing interest in dynamic models which consider factors such as competitors' reactions to the firm's strategy; entry of new competitors; changes in government regulations and technology; and changes in consumer demographics, needs, and behavior. These and other dynamic factors are often dealt with via simulations, sensitivity analysis, and even more complex analytical models.

**Deterministic and Stochastic Models.** Major developments in stochastic brand choice models include the incorporation of marketing mix variables and the use of these models as a basis for laws of market behavior. The Hendry system, for example, partitions and defines a market in terms of current market shares and a switching constant. Based on this, it calculates a par share for a new brand entry and suggests implications for the new brand and its competitors.

Despite these encouraging developments, most other marketing models, and especially those used at SBU and corporate levels, are deterministic in nature. Even new product diffusion models have been mostly deterministic, and only recently have they been extended to incorporate stochastic considerations.

**Models and Decision Support Systems.** Much early marketing modeling effort was limited to a single-focus model. Recently, however, many of these models have been linked to marketing decision support systems—a coordinated collection of data, model, analytical tools, and computing power that help managers make better decisions. These systems tend to replace the earlier, mostly problematic marketing information systems, which often failed because of lack of user orientation. User-oriented and friendly marketing decision support systems are emerging. They utilize computer technology (including personal computers); artificial intelligence; management judgments; inputs on market, competitive, and environmental conditions; and the performance of the firm's products and services.

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## MODELS OF THE SIX Cs

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We now turn to marketing planning and decision-making models which encompass the six Cs in Figure 49-1.

**Customer.** Customer models include individual choice, market segment, and aggregate market models. Whereas much of the consumer and organizational buying behavior literature has focused on individual choice models, many have had limited use, especially at the SBU and corporate level. Of greater value to all DMU levels have been *market segmentation models*. These models provide information on the size of the segment, its expected response to key marketing strategy variables, and a profile of its key discriminating characteristics. The selection of target market segment(s) is basic to any marketing or business strategy. Management should be sure that their segmentation models include valid and reachable segments, guidelines for the design of the marketing strategy, and resource allocation among segments.

*Total market models* are most prominent at SBU and corporate levels. They contain the potential demand of various markets and assess the market response to the marketing strategies of the firm and its competitors. Such models, and especially econometric models, take into account nonlinear effects, appropriate lag effects, interaction among the marketing mix strategies, competitive response, and the relevant exogenous variables. These serve as diagnostic inputs to the design of marketing strategies, as indicators of likely outcomes, and also as inputs to resource allocation among products. They also consider the allocations of resources among the elements of the promotional mix. New product diffusion models which incorporate marketing mix effects and competition can also be very helpful. Both the econometric and diffusion models are more effective when they are conducted at the segment level and are based on a sound individual and buying center choice of model.

**Competitive.** Two major competitive models are employed in marketing (1) consumers' perceptions of the competitive environment via product positioning and market structure analysis, and (2) the competitive effect as assessed in

econometric market response models. (These can take a number of possible forms including share models, incorporation of competitors' marketing strategies in the model, and simultaneous equation models for competitors' reaction functions.) Competition is typically included as a component of environmental analysis; but with few notable exceptions, little attention has been given in the marketing literature to dynamic competitive effects. Developers of strategy models therefore need to incorporate ways of assessing competitive actions and reactions, and developing offensive and defensive competitive strategies which incorporate positioning and segmentation as key strategies for gaining a competitive advantage. The AHP can be useful in analyzing dynamic competitive effects when it develops a decision hierarchy for each key competitor. These would then go through a series of iterations in which the decision of each competitor serves in turn as part of the relevant scenario of the other competitors. This would allow management (if it can accurately role play its competitors) to select an optimal competitive strategy which would minimize the negative impacts of likely defensive and offensive competitive strategies.

**Cooperative.** The tremendous increase in the number of domestic and multinational mergers, acquisitions, joint ventures, licensing, and other cooperative arrangements highlights the importance of this strategic area. Cooperative arrangements are not limited to the business strategy; they are also relevant to marketing strategies at all DMU levels. Although receiving little attention in the marketing literature, there are a number of marketing models that could be of value in the area of cooperative arrangements. These include identification of the most appropriate type of cooperative arrangement, taking into account the requirements for success, the firm's strengths and weaknesses, and any likely synergy between the potential partners. Synergy models, especially those focusing on market and marketing-based synergy, would be relevant. Negotiation models could help in the selection of a cooperative partner. In the international area, a number of counter trade (barter) models are being developed that will help in the selection of appropriate cooperative arrangements.

**Channel.** Whereas much attention has been focused on product and market strategies, relatively little has been given to the potential for creative channel strategies. Yet much can be said for focusing on distribution as a key strategic variable. To help in this respect, one has to go beyond the conventional channel selection models and consider models which allow one to generate and evaluate innovative channel strategies. The AHP is one of the models used to help in both the generation of channel strategies and the selection of an optimal portfolio of channel outlets.

**Culture and Environmental.** Major inputs to planning should come from the monitoring of relevant environmental forces, their interrelationships (cross impact), their direction and magnitude of change, and their likely effects on the firm's operations. Much of the focus in this area has been on models for forecasting environmental trends, including environmental monitoring and scanning and cross impact analyses. Given the large number of environmental factors and their complex interrelationships, a few manageable scenarios which combine a set of interrelated factors, provide valuable inputs to marketing strategy generation at all relevant DMUs. Models for a situation analysis, for example, answer the questions "where are we?" and "where are we going, assuming no specific



changes in our marketing strategies, competitive actions, or environmental conditions?"

**Company.** Any marketing or business decision can use models of the external five Cs (see Figure 49-1) and their integration into a "company model." While company models vary greatly in scope, approach, and methodology, all share a number of key characteristics: (1) determination of the DMU's desired mission and objectives; (2) assessment of the current situation; (3) creation of strategic options for achieving objectives; (4) evaluation of various strategic options and selection of the most appropriate strategy; (5) the development of an implementation plan; and (6) establishing methods of control. Whereas many company models are restricted to outlining the process, some also provide analytical solutions and associated sensitivity analyses. The AHP is an example. It can be employed for purely marketing decisions or for the design of a marketing-oriented business strategy.

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## MODELS OF THE ELEVEN Ps

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Most marketing model development has focused on the four Ps at the brand level. But we must not overlook models which have been developed and applied to the eleven Ps at all DMU levels.

**Product.** Product models have been applied to the entire range of product decisions from the generation of a new product idea to market introduction, to its management through the product life cycle, and finally to product deletion. These models have encompassed all of the major modeling and research developments in marketing. They have been subject to some of the more creative modeling efforts which include simulated test markets and innovative models for product design optimization and product line decisions.

**Pricing.** Most pricing models are aimed at assessing the price sensitivity of the market. They include experimentation, econometric modeling, conjoint analysis, and a variety of consumer surveys focusing on customer attitudes toward price and price perceptions. Most conjoint analysis models include price as a factor, leading to the determination of price elasticity. More specialized models, such as the Mahajan and Green Elasticity models, offer insights into the cross elasticity of demand and the expected impact of price changes on brand shares. There is also increasing interest in bidding models and in identifying the best pricing strategy — not just the price itself but a number of associated "services" such as terms of payment, discounts, premiums, and life cycle costing.

**Advertising and Sales Promotion.** Advertising models encompass copy testing, media selection, advertising pulsing, campaign scheduling, and advertising budgeting. Advertising is included in most market response models where it is used to assess the relative contribution of advertising to product sales, market share, or diffusion patterns. Much of the development is linked to new research methods and the design of test market areas where split cable is used along with data collection, including consumer panels to measure experimentally the contribution of different advertising strategies.

More recent models are measuring the effects of sales promotional pro-

grams. The PROMOTER model by Management Decision Systems, Inc., uses artificial intelligence technology. It offers on-line computer access to evaluate sales promotion programs using measures such as incremental sales and profit, consumer pull-through, and comparisons with other company sales promotions and those of competitors.

**Place — Distribution and Sales Force.** Significant modeling has been done in the sales force area, focusing on allocations of salespeople to territories, territory realignment, frequency of sales calls, and scheduling of sales calls. Sales force expenditures are often included as part of a market response model. Distribution has received less attention, focusing mainly on identifying the best distribution outlets. The tremendous growth of *direct marketing* activities has led to significant modeling and research activities. This modeling is often linked to experimentation and is aimed at establishing the most effective direct marketing program.

**Positioning.** Given the importance of positioning as the foundation of marketing strategy, it is no wonder that much attention has been given to the development of positioning models. Multidimensional scaling and conjoint analysis have been used primarily for positioning analysis. Models for positioning strategy include optimization models such as POSSE which help to select a product's best position and then find its best market segment; or, alternatively, it selects a target segment and then finds the product's optimal position. AHP models have also been used to find the best positioning to reach selected target segments.

**Portfolio of Market Segments.** The selection of target market segments is (together with the positioning decision) the foundation for most marketing programs. Yet there are few models for the selection of market segments. The segmentation decision is one of the major meeting grounds between marketing research and modeling, since models used for the selection of target segments require considerable amounts of information on the size of segments, their key characteristics, expected competitive activities, and expected market response of given segments to the offerings of the firm. Among the segmentation models used are normative models which try to offer prescriptive guidelines. Also, models such as POSSE and AHP have been used effectively. AHP is especially appropriate when one considers the portfolio of segments that product management, the SBU, or the firm wishes to reach.

**Portfolio by Product Segment and Distribution.** One of the key decisions facing any DMU manager is the determination of the desired portfolio of products by market segments by distribution outlets. This decision involves (1) an analysis of the current product, market, and distribution portfolio and (2) the selection of the *desired* portfolio of products, market segments and distribution outlets. The analysis of the current product, market, and distribution portfolio follows two major approaches: (1) *factor listing* and (2) frameworks proposed by one of the *product portfolio models*.

Factor listing takes into consideration the factors used in making decisions on the width and depth of the portfolio. Product portfolio models offer a more structured set of dimensions on which the current portfolio can be analyzed. These dimensions include market share (as a measure of the business' strength), market growth (as a measure of the business' attraction), as well as profitability, expected return, and risk. Most models focus on two dimen-

sions — company (product) capabilities and market attractiveness. Yet the specific dimensions vary from one portfolio model to another. They include models with a normative set of dimensions (such as share and growth or risk and return) and the more flexible customized portfolio models which identify dimensions that management considers relevant.

Following classification of the existing (and any potential new) products of the firm on the chosen dimensions, the major managerial task is to decide on the desired target portfolio. The target portfolio should not be limited only to products. Ideally it would also include target market segments and distribution outlets. Such a portfolio reflects management's objectives; desired direction of growth; and the interactions (synergy) among products, market segments, and distribution outlets.

**Portfolio of Countries by Mode of Entry.** Given the importance of international markets and growing foreign competition in the home market, management should consider not only its domestic market but also relevant international markets. A critical component of any international marketing strategy is the determination of the desired countries of operation and their associated mode of entry (for example, export, joint venture, or direct investment). For a more systematic approach to these opportunities, the most appropriate model takes a portfolio perspective, permitting management to evaluate the most desirable portfolio of countries considering mode of entry by market segment, by product, by distribution, and by marketing mix strategy. Less comprehensive models are limited to country screening or to scheduling the sequence of entry by mode of entry.

**Political Marketing Tools.** To perform effectively in today's environment requires a recognition of the increased importance of counter trade (barter), the huge government market, and the gatekeepers who control the entry to these markets, and the mode of operations within them. Consider, for example, the various federal and state regulatory agencies, trade barriers erected by foreign governments, and the role played by public and consumer groups in blocking product entry and operations (for example, the antinuclear groups and environmentalists). The presence of these and similar forces requires negotiations, lobbying, and other politically based marketing approaches. Some of the more promising lines of research are bidding models, dynamic counter trade models, product screening models, and negotiation models.

**Public Relations and Public Affairs.** Public relations communicates with the desired target segments and other external stakeholders. Although this function is normally outside the responsibilities of marketing, there is much to be said for developing public relations and public affairs programs consistent with the overall marketing strategy of the firm. Modeling activities from the advertising and communication areas could be applied here.

**The Marketing Program.** An important modeling area which has had limited usage in practice is the modeling of the entire marketing program. Such models tend to focus on limited interaction among marketing mix variables. BRANDAID is one of the few models that focuses on the entire marketing mix program. This model is a decision support system with modular components which are developed individually and then put together to form a customized marketing mix program.



The most exciting and promising developments in the marketing mix area are studies and models of synergy among the various marketing program elements and approaches which allow for the development of an *integrated* program. They include the selection of a target market segment, desired product positioning, and the identification of a creative strategic thrust that links these with the rest of the marketing program. The AHP has been especially useful for this purpose. The key components of any effective model of a marketing mix program will reflect management decision style and judgment, facilitate the logical linking of the various strategy components, allow for the generation of creative strategies, use relevant market-based data for both the generation and evaluation of options, assess the level of synergy among the key marketing mix components, and be operationalized as a user-oriented support system for marketing decisions.

## CONCLUSIONS

Models for marketing planning and decision making are widely available and are increasingly used in all areas of marketing. Yet the most significant challenge is to develop models which offer a *market-driven integration of creativity, analytical skills, and practical business considerations*.

The advancement of marketing requires analytical approaches which help stimulate the generation of creative options. Creative and analytical approaches should be oriented toward the needs of the business practitioner. They should be approached from a marketing perspective and applied to understanding the needs, wants, attitudes, perceptions, preferences, and behavioral patterns of potential consumers and other relevant *stakeholders*. This perspective is illustrated graphically in Figure 49-3.

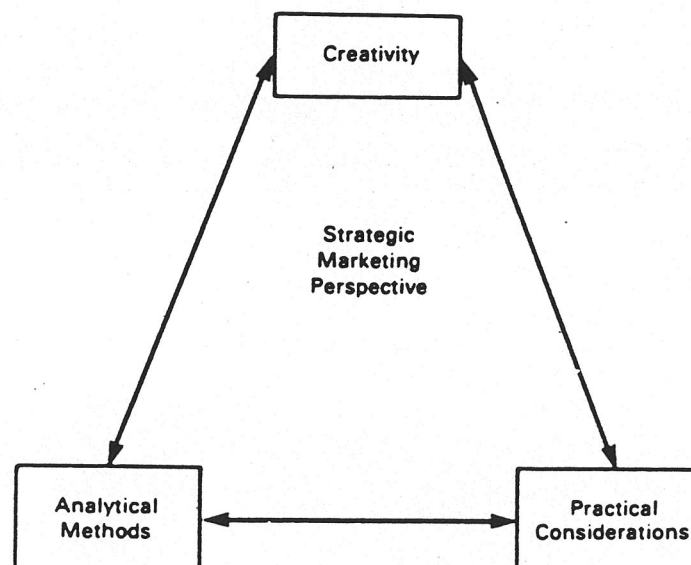


FIGURE 49-3 The proposed perspective.

To further advance the state of models for practical marketing planning and decision making requires (1) continued development of models which are built upon the latest advances in measurement, new data collection services, and sophisticated mathematical models and theories; and (2) close collaboration between academic researchers and industry practitioners. It is the practitioners who can provide the real world (laboratory) environment for developing, testing, and implementing marketing-driven *creative and relevant analytical* approaches for the generation, evaluation, and implementation of marketing and business strategy.

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